CLAIMS

1. Torque motor (1) with an annular rotor (15) and an annular stator (2), which comprises a stator frame with iron cores and electrical windings arranged thereon, characterized by the fact that the iron cores (10) and the electrical windings (11) are arranged in one or more independent stator segments (3), such that each of these stator segments (3)

• is designed to operate independently;

• comprises its own housing, in which the segment's own iron core (10) and the segment's own electrical winding (11) are installed;

• occupies a predetermined angular segment $\leq 180°$ in the stator frame; and

• is detachably joined to the stator frame in such a way that it can be installed and removed independently of the other stator segments without damaging its electrical winding or the stator frame.

2. Torque motor in accordance with Claim 1, characterized by the fact that a large number of stator segments (3) are installed, each of which occupies an angular segment $\leq 45°$ in the stator frame.

3. Torque motor in accordance with Claim 1 or Claim 2, characterized by the fact that the annular rotor (15) comprises a rotor frame and permanent magnets mounted on it.

4. Torque motor in accordance with any of Claims 1 to 3, characterized by the fact that the electrical windings (11) of several stator segments (3) are electrically connected to one another by electrical connecting elements, which run between the stator segments (3) and are detachable.

5. Torque motor in accordance with any of Claims 1 to 4, characterized by the fact that the stator frame comprises a lower stator ring (4) and an upper stator ring (5), between which the

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stator segments (3) are positioned.

6. Torque motor in accordance with Claim 5, characterized by the fact that several frame webs (8), which are used to mount the stator segments (3), run between the lower stator ring (5) and the upper stator ring (5) essentially vertically to the stator rings (4, 5).

7. Torque motor in accordance with Claim 6, characterized by the fact that the lateral faces of the frame webs (8) lie on different radial planes of the stator and are angled relative to one another.

8. Torque motor in accordance with Claim 7, characterized by the fact that frame webs (8) of different thicknesses are used between similar stator segments (3), so that the distance between adjacent stator segments (3) can be adjusted.

9. Torque motor in accordance with any of Claims 1 to 8, characterized by the fact that several similar stator segments (3) form a closed annular stator (2).

10. Torque motor in accordance with any of Claims 1 to 9, characterized by the fact that it is designed as a three-phase AC synchronous motor, in which the electrical windings (11) form three coils in each stator segment (3), which are coupled with the associated coils of other stator segments (3).

11. Torque motor in accordance with any of Claims 1 to 10, characterized by the fact that a heat sink (12), which has at least one flow channel through which a coolant flows, is mounted on each stator segment (3).

12. Torque motor in accordance with Claim 11, characterized by the fact that the flow channels of adjacent stator segments (3) are connected with one another in series by detachable channel connectors (6).

13. Torque motor in accordance with any of Claims 1 to 12, characterized by the fact

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that a temperature sensor is installed in each stator segment (3) to monitor the temperature of the electrical winding (11) in this stator segment.

14. Torque motor in accordance with any of Claims 1 to 13, characterized by the fact that the stator (2) encompasses the rotor (15) as an outer ring; that a bearing (16) is installed between the stator (2) and rotor (15); and that a measuring system (17) is integrated in the torque motor for determining the relative position of the rotor and stator.

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